

**Power device with a short-circuit detector****Publication number:** JP2000509933T**Publication date:** 2000-08-02**Inventor:****Applicant:****Classification:**

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Abstract not available for JP2000509933T

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A power device circuit comprises a power semiconductor device (MPWR) in series with a load (LD) between a power supply line (1) and a return line (2), and a short-circuit detector (R1, R2, . . . R1', R2', . . . CP) for determining whether the load (LD) is short-circuit. The short-circuit detector examines the distribution of the supply-to-return voltage (Vbg) between the device (MPWR) and the load (LD) by comprising a comparator (CP) which has a first input (+) coupled to a series node (11) between the device and load and a second input (+) from circuit means (R1, R2, . . . , R1', R2', . . . ) coupled between the supply and return lines (1 and 2) to provide the second input (-) with a voltage supply signal (Vbg') which is a predetermined function of the supply-to-return voltage (Vbg). By so comparing the voltage (Vdl) at the series node (11) with the predetermined function of the supply-to-return voltage (Vbg), the detector (SC) provides an output signal (sc) indicating whether or not a short-circuit is present. Preferably pinch-resistors (R1,R2) or a voltage-clamp (ZD) are used with the circuit means (R1, R2, . . . , R1', R2', . . . ), so that the predetermined function of the supply-to-return voltage (Vbg) input to the comparator (CP) varies with the magnitude of the supply-to-return voltage (Vbg). By this means a lower percentage of the supply-to-return voltage (Vbg) can be input at a higher magnitude of the supply-to-return voltage (Vbg) than at a lower magnitude.

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